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PATENT
Attorney Docket No. A-72072-1
Attorney File No.: 460930-00007

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of

SPANGLER *et al.*

Serial No. 10/763,413

Filed: January 23, 2004

For: *Biosensor Utilizing Dendrimer
Immobilized Ligands and Their
Use Thereof*

Examiner: SWARTZ, Rodney P.

Art Unit: 1645

CERTIFICATE OF MAILING

I hereby certify that this correspondence, including listed enclosures, is being deposited with the United States Postal Service as First Class Mail in an envelope addressed to: Mail Stop Amendment, Commissioner for Patents, P.O. BOX 1450, Alexandria, VA 22313-1450 on:

Dated: July 12, 2005

Signed: 
Byent Yonchara

**SUPPLEMENTAL INFORMATION DISCLOSURE STATEMENT
AND
STATEMENT OF RELATEDNESS**

Mail Stop Amendment
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

In satisfaction of the duty of disclosure under 37 C.F.R. § 1.56, and in accordance with the provisions of 37 C.F.R. §§ 1.97 and 1.98, Applicants wish to draw the attention of the U.S. Patent and Trademark Office to the references cited on the accompanying form PTO/SB/8A. In accordance with 1287 Off. Gaz. Pat. Office 163, 10/19/2004, no copies of U.S. patents or U.S. published applications are enclosed. Copies of foreign patents and non-patent literature are enclosed.

Further, in satisfaction of the duty of disclosure under 37 C.F.R. § 1.56, and as required by M.P.E.P. § 2001.06(b), Applicant notes that the present application is related to the following pending patent applications:

07/19/2005 SSITHI1 00000015 10763413
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180.00 gp

- U.S.S.N. 08/873,978, filed June 12, 1997; U.S.S.N. 09/557,577, filed April 21, 2000.

Nothing herein shall constitute an admission concerning the contents of any of the cited references, nor shall the inclusion of a reference herein be considered an admission that the reference constitutes prior art against the invention claimed in the above-identified application. Submission of the present document shall not be construed as an admission that a search has been made or that better art does not exist.

Pursuant to 37 C.F.R. §1.97(c), enclosed is a check in the amount of \$180.00 as set forth in 37 C.F.R. §1.17(p). While no further fee is believed to be due, if this belief is in error, the Commissioner is authorized to charge any additional fees which may be required, or credit any overpayment to Deposit Account No. 50-2319 (Our Order No. 460930-00007; Our Docket No.: A-72072-1).

Please direct further questions in connection with this Application to the undersigned at (415) 781-1989.

Respectfully submitted,
DORSEY & WHITNEY LLP

Dated: 2/12/05

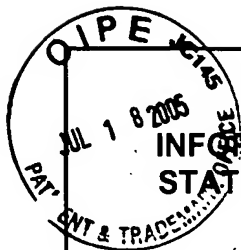
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Attachments: Form SB/08/A-B, substitute for Form PTO-1449
Copies of 109 cited references
Check for \$180.00



Substitute for form 1449A/PTO
(Modified)

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(use as many sheets as necessary)

Complete if Known

Application Number	10/763,413
Filing Date	January 23, 2004
First Named Inventor	SPANGLER, Brenda D.
Art Unit	1645
Examiner Name	SWARTZ, Ronald P.
Attorney Docket Number	A-72072-1 (460930-00007)

Sheet

1

of

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U.S. PATENT DOCUMENTS

Examiner Initials*	Cite No. ¹	Document Number Number-Kind Code ² (if known)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
	A1	4,964,972	10-23-1990	Sagiv et al.	
	A2	5,108,573	04-28-1992	Rubinstein et al.	
	A3	5,156,810	10-20-1992	Ribi	
	A4	5,242,828	09-07-1993	Bergstrom et al.	
	A5	5,294,369	03-15-1994	Shigekawa et al.	
	A6	5,472,881	12-05-1995	Beebe et al.	
	A7	5,512,131	04-30-1996	Kumar et al.	
	A8	5,620,850	04-15-1997	Bamdad et al.	
	A9	5,776,672	07-07-1998	Hashimoto et al.	
	A10	5,834,224	11-10-1998	Ruger et al.	
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	A13	5,861,242	01-19-1999	Chee et al.	
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	A16	5,968,745	10-19-1999	Thorp et al.	
	A17	5,972,692	10-26-1999	Hashimoto et al.	
	A18	6,020,047	02-01-2000	Everhart	
	A19	6,066,448	05-23-2000	Wohlstadter et al.	
	A20	6,090,545	07-18-2000	Wohlstadter et al.	
	A21	6,090,933	07-18-2000	Kayyem et al.	
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	A23	6,107,080	08-22-2000	Lennox	
	A24	6,127,127	10-03-2000	Eckhardt et al.	
	A25	6,140,045	10-31-2000	Wohlstadter et al.	
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	A31	6,322,979 B1	11-27-2001	Bamdad et al.	
	A32	6,361,671 B1	03-26-2002	Mathies et al.	

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This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 2 hours to complete, including gathering, preparing, and submitting the complete application form to the USPTO. Time will vary depending on the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

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<p>Substitute for form 1449A/PTO (Modified)</p> <p>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</p> <p>(use as many sheets as necessary)</p>				Complete if Known	
				Application Number	10/763,413
				Filing Date	January 23, 2004
				First Named Inventor	SPANGLER, Brenda D.
				Art Unit	1645
				Examiner Name	SWARTZ, Ronald P.
Sheet	2	of	8	Attorney Docket Number	A-72072-1 (460930-00007)

U.S. PATENT DOCUMENTS					
Examiner Initials*	Cite No. ¹	Document Number Number-Kind Code ² (if known)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
	A33	6,472,148 B1	10-29-2002	Bamdad et al.	
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	A36	2002-0042074 A1	04-11-2002	Bamdad et al.	
	A37	2003-0003473 A1	01-02-2003	Kayyem et al.	
	A38	2003-0150723 A1	08-14-2003	Kayyem et al.	

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	B1	EP 0 339 821 A1	11-02-1989	United Kingdom Atomic Energy Authority		
	B2	WO 86/05815 A1	10-09-1986	Genetics International, Inc.		
	B3	WO 93/22678 A2/A3	11-11-1993	Massachusetts Institute of Technology		
	B4	WO 94/22889 A1	10-13-1994	Cis Bio International		
	B5	WO 96/06946 A1	03-07-1996	Igen, Inc.		
	B6	WO 96/10178 A1	04-04-1996	Pharmacia Biosensor AB		
	B7	WO 97/31256 A2/A3	08-28-1997	Cornell Research Foundation, Inc.		
	B8	WO 97/41425 A1	11-06-1997	Pence, Inc.		
	B9	WO 97/44651 A1	11-27-1997	Australian Membrane and Biotechnology Institute		
	B10	WO 98/04740 A1	02-05-1998	Northwestern University		
	B11	WO 98/12539 A1	03-26-1998	Meso Scale Technologies, LLC		
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	B13	WO 98/31839 A2/A3	07-23-1998	Presidents & Fellows of Harvard College		
	B14	WO 98/49344 A1	11-05-1998	Lockheed Martin Energy Research Corp.		
	B15	WO 98/51823 A1	11-19-1998	Mosaic Technology		
	B16	WO 99/13109 A1	03-18-1999	Seq Ltd.		

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	B17	WO 99/14596 A1	03-25-1999	AB Sangtec Medical		
	B18	WO 99/15893 A1	04-01-1999	Aventis Res. & Technologies GmbH & Co.		
	B19	WO 99/26729 A1	06-03-1999	Universite de Montreal		
	B20	WO 99/29711 A1	06-17-1999	Nanogen, Inc.		
	B21	WO 01/42508 A2	06-14-2001	Motorola, Inc.		
	B22	WO 01/43870 A2	06-21-2001	Motorola, Inc.		

NON PATENT LITERATURE DOCUMENTS			
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	C1	AIZAWA, M., et al., "Integrated molecular systems for biosensors," <i>Sens. Actuators B Chem.</i> 24(1&3):1-5 (Mar. 1995).	
	C2	ALBERS, W., et al., "Design of novel molecular wires for realizing long-distance electron transfer," <i>Bioelectrochem. Bioenerg.</i> 42(1):25-33 (Apr. 1997).	
	C3	BAIN, W., et al., "Formation of monolayers by the coadsorption of thiols on gold: variation in the length of the alkyl chain," <i>J. Am. Chem. Soc.</i> 111(18):7164-7175 (Aug. 1989).	
	C4	BAMDAD, C., "A DNA self-assembled monolayer for the specific attachment of unmodified double - or single stranded DNA," <i>Biophys. J.</i> 75(4):1997-2003 (Oct. 1998).	
	C5	BEATTIE, K., et al., "Advances in genosensor research," <i>Clin. Chem.</i> 41(5):700-706 (1995).	
	C6	BEATTIE, K., et al., "Genosensor Technology," <i>Clin. Chem.</i> 39(4):719-722 (1993).	
	C7	BILEWICZ, R., et al., "Monomolecular Langmuir-Blodgett films at electrodes: electrochemistry at single molecule 'gate sites'," <i>Langmuir</i> 11(6):2256-2266 (Jun. 1995).	
	C8	BRUN, A., et al., "Photochemistry of intercalated quaternary diazaaromatic salts," <i>J. Am. Chem. Soc.</i> 113(21):8153-8159 (Oct. 1991).	
	C9	CHAILAPAKUL, O., et al., "Interactions between organized, surface-confined monolayers and liquid-phase probe molecules. 4. synthesis and characterization of nanoporous molecular assemblies: mechanism of probe penetration," <i>Langmuir</i> 11(4):1329-1340 (Apr. 1995).	
	C10	CHARYCH, D., et al., "Direct colorimetric detection of a receptor-ligand interaction by polymerized bilayer assembly," <i>Science</i> 261(5121):585-588 (Jul. 1993).	
	C11	CHENG, J., et al., "Selectivity and sensitivity of self-assembled thioctic acid electrodes," <i>Anal. Chem.</i> 64(17):1998-1999 (Sep. 1992).	
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	C13	CHIEM, N., et al., "Microfluidic systems for clinical diagnostics," <i>Transducers'97: 1997 Intl. Conf. Solid State Sens. Actuators</i> , Chicago, IL (Jun. 16-19, 1997).	
	C14	COLVIN, V., et al., "Semiconductor nanocrystals covalently bound to metal surfaces with self-assembled monolayers," <i>J. Am. Chem. Soc.</i> 114(13):5221-5230 (Jun. 1992).	
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	C16	DHIRANI, A.A., et al., "Self-assembly of conjugated molecular rods: a high resolution STM study," <i>J. Am. Chem. Soc.</i> 118(13):3319-3320 (Apr. 1996).	
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	C20	DRMANAC, R., et al., "Sequencing of megabase plus DNA hybridization: Theory of the method," <i>Genomics</i> 4(2):114-128 (Feb. 1989).	
	C21	DROBYSHEV, A., et al., "Sequence analysis by hybridization with oligonucleotide microchip: identification of β -thalassemia mutations," <i>Gene</i> 188(1):45-52 (Mar. 1997).	
	C22	DUAN, C., et al., "Immobilization of proteins on gold coated porous membranes via an activated self-assembled monolayer of thiotic acid," <i>Mikrochim. Acta.</i> 117:195-206 (1995).	
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	C24	EGGERS, M., et al., "Genosensors: microfabricated devices for automated DNA sequence analysis," <i>Adv. DNA Sequencing Tech.</i> 1891:113-126 (1993).	
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	C27	FUJIKAWA, H., et al., "Kinetics of <i>Escherichia coli</i> destruction by microwave irradiation," <i>Appl. Environ. Microbiol.</i> 58(3):920-924 (Mar. 1992).	
	C28	GAFNI, Y., et al., "Biomimetic ion-binding monolayers on gold and their characterization by ac-impedance spectroscopy," <i>Chem. Eur. J.</i> 2(7):759-766 (1996).	
	C29	GHINDILIS, A., et al., "Immunosensors: electrochemical sensing and other engineering approaches," <i>Biosens. Bioelect.</i> 13(1):113-131 (Jan. 1998).	
	C30	HARRISON, D., et al., "Characterization of perfluorosulfonic acid polymer coated enzyme electrodes and a miniaturized integrated potentiostat for glucose analysis in whole blood," <i>Anal. Chem.</i> 60(19):2002-2007 (Oct. 1988).	

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	C31	HARRISON, D., et al., "Immunoassay Flow Systems In-Chip," <i>Solid-State Sens. Actuator Workshop</i> , Hilton Head, SC (Jun. 2-6, 1996).		
	C32	HASHIMOTO, K., et al., "DNA sensor: A novel electrochemical gene detection method using carbon electrode immobilized DNA probes," <i>Supramol. Chem.</i> 2:265-270 (1993).		
	C33	HOCHULI, E., et al., "New metal chelate adsorbent selective for proteins and peptides containing neighbouring histidine residues," <i>J. Chromatogr.</i> 411:177-184 (Dec. 1987).		
	C34	HOFFMANN, A., et al., "Purification of his-tagged proteins in non-denaturing conditions suggests a convenient method for protein interaction studies," <i>Nucleic Acids Res.</i> 19(22):6337-6338 (Nov. 1991).		
	C35	HOLMLIN, R.E., et al., "Charge transfer through the DNA base stack," <i>Angew. Chem. Int. Ed. Engl.</i> 36(24):2714-2730 (Jan. 1998).		
	C36	KATZ, E., et al., "Application of stilbene-(4,4'-diisothiocyanate)-2,2'-disulfonic acid as a bifunctional reagent for the organization of organic materials and proteins onto electrode surfaces," <i>J. Electroanal. Chem.</i> 354(1&2):129-144 (1993).		
	C37	KELLEY, S. O., et al., "Electrochemistry of methylene blue bound to a DNA-modified electrode," <i>Bioconjug. Chem.</i> 8(1):31-37 (Jan. - Feb. 1997).		
	C38	KIM, M., et al., "The fabrication of flow conduits in ceramic tapes and the measurement of fluid flow through these conduits," <i>ASME: Micro Electro Mechanical Systems-1998</i> , 66:171-177 (1998).		
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	C40	KUNITAKE, M., et al., "Interfacial buffer effect of self-assembled monolayers of a carboxylic acid terminated alkanethiol of a gold electrode," <i>J. Chem. Soc. Chem. Commun.</i> 5:563-564 (1994).		
	C41	LEE, G., et al., "Direct measurement of the forces between complementary strands of DNA," <i>Science</i> 266(5186):771-773 (Nov. 1994).		
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		Application Number	10/763,413		
		Filing Date	January 23, 2004		
		First Named Inventor	SPANGLER, Brenda D.		
		Art Unit	1645		
		Examiner Name	SWARTZ, Ronald P.		
Sheet	6	of	8	Attorney Docket Number	A-72072-1 (460930-00007)

NON PATENT LITERATURE DOCUMENTS			
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	C49	MIR, K., et al., "Determining the influence of structure on hybridization using oligonucleotide arrays," <i>Nat. Biotechnol.</i> 17(8):788-792 (Aug. 1999).	
	C50	MIRSKY, V., et al., "Capacitive monitoring of protein immobilization and antigen-antibody reactions on monomolecular alkythiol films on gold electrode," <i>Biosens. Bioelect.</i> 12(9&10):977-989 (1997).	
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	C56	NIWA, M., et al., "Specific binding of concanavalin A to glycolipid monolayers on gold electrodes," <i>J. Chem. Soc. Chem. Commun.</i> 7:547-549 (1992).	
	C57	ORELLANA, G., et al., "Photoinduced electron transfer quenching of excited Ru(II) polypyridyls bound to DNA: the role of the nucleic acid double helix," <i>Photochem. Photobiol.</i> 54(4):499-509 (Oct. 1991).	
	C58	OSBOURN, D., et al., "Cellulose acetate decoupler for on-column electrochemical detection in capillary electrophoresis," <i>Anal. Chem.</i> 73(24):5961-5964 (Dec. 2001).	
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				Examiner Name	SWARTZ, Ronald P.
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	C67	SCHLERETH, D., et al., "Self-assembled monolayers with biospecific affinity for lactate dehydrogenase for the electroenzymatic oxidation of lactate," <i>J. Electroanal. Chem.</i> 431(2):285-295 (Jul. 1997).	
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	C82	TURYAN, I., et al., "Selective determination of CR(VI) by self-assembled monolayer-based electrode," <i>Anal. Chem.</i> 69(5):894-897 (Mar. 1997).	
	C83	WALLACE, W., et al., "Electron transfer of yeast cytochrome c immobilized on sam modified gold electrodes", <i>Book of Abstracts, 214th ACS National Meeting</i> , Las Vegas, NV, PHYS-326, American Chemical Society: Washington, DC (September 7-11 1997).	

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	C84	WANG, J., et al., "DNA biosensor for the detection of hydrazines," <i>Anal. Chem.</i> 68(13):2251-2254 (Jul. 1996).	
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